

LISTING OF CLAIMS:

1. (CURRENTLY AMENDED) A method for the production of a shell mould, comprising:

(i) dipping a preformed expendable pattern into a slurry of refractory particles and colloidal liquid binder whereby to form a coating layer on said pattern,

(ii) depositing particles of refractory material onto said coating, and

(iii) drying,

steps (i) to (iii) being repeated as often as required to produce a shell mould having a primary coating layer and at least one secondary coating layer, wherein during at least one performance of step (ii) a gel-forming material is also deposited onto the coating layer formed in step (i) , such that after contact with the coating layer, moisture is absorbed by the gel-forming material thereby causing gelation of the colloidal binder so reducing the time required for drying in step (iii).

2. (ORIGINAL) The method as claimed in claim 1, wherein the method also includes the additional step (iv), carried out after the final step (iii), of applying a seal coat comprising a slurry of refractory particles and liquid binder, followed by drying.

3. (PREVIOUSLY PRESENTED) The method as claimed in claim 1, wherein the gel-forming material is applied onto each secondary coating.

4. (PREVIOUSLY PRESENTED) The method as claimed in claim 1, wherein the gel-forming material is applied onto the primary coating layer.

5. (PREVIOUSLY PRESENTED) The method as claimed in claim 1, wherein said gel-forming material is a super absorbent polymer.
6. (ORIGINAL) The method is claimed in claim 5, wherein the polymer is polyacrylamide or polyacrylate.
7. (PREVIOUSLY PRESENTED) The method as claimed in claim 5, wherein the polymer is a particulate material and at least 50wt% of the polymer particles are 300 μ m or smaller.
8. (ORIGINAL) The method as claimed in claim 7, wherein at least 95wt% of the polymer particles are 300 μ m or smaller.
9. (PREVIOUSLY PRESENTED) The method as claimed in claim 1, wherein the refractory particles are coated with gel-forming material.
10. (CURRENTLY AMENDED) The method as claimed in claim 2, which includes a step of removing the expendable pattern from the shell mould after the last step (iii) or step (iv) when present ~~and preferably a final step of firing the resultant shell mould.~~
11. (CURRENTLY AMENDED) The method as claimed in claim 10, wherein firing is effected by heating to a temperature of from 400°C to 700°C of a heating rate of from 1°C to 5°C/min, followed by heating to at least 950°C at a heating rate of 5°C/min or more.

12. (PREVIOUSLY PRESENTED) The method as claimed in claim 1, wherein the gel-forming material added during each step (ii) constitutes less than 10% by weight of the refractory particles added during that step (ii).

13. (ORIGINAL) The method as claimed in claim 12, wherein the gel-forming material constitutes less than 3wt% of the refractory particles.

14. (CURRENTLY AMENDED) A shell mould producible by a method comprising:

(i) dipping a preformed expendable pattern into a slurry of refractory particles and colloidal liquid binder whereby to form a coating layer on said pattern,

(ii) depositing particles of refractory material onto said coating, and

(iii) drying,

steps (i) to (iii) being repeated as often as required to produce a shell mould having a primary coating layer and at least one secondary coating layer, wherein during at least one performance of step (ii) a gel-forming material is also deposited onto the coating layer formed in step (i), such that after contact with the coating layer, moisture is absorbed by the gel-forming material thereby causing gelation of the colloidal binder so reducing the time required for drying in step (iii).

15. (CURRENTLY AMENDED) An unfired precursor to a shell mould for producing a casting, said precursor ~~mould~~ comprising a shell having a cavity therein in the shape of the casting, the shell comprising a plurality of layers, wherein at least one of said layers comprises a gel-forming material containing absorbed moisture, refractory particles and gelled colloidal liquid binder.

16. (CURRENTLY AMENDED) The precursor to a shell mould as claimed in

claim 15, wherein the gel-forming material is a super absorbent polymer.

17. (CURRENTLY AMENDED) The precursor to a shell mould as claimed in claim 16, wherein said polymer is polyacrylamide.

18. (CURRENTLY AMENDED) The precursor to a shell mould as claimed in claim 16, wherein at least 95wt% of the polymer particles are 300µm or smaller.

19. (CURRENTLY AMENDED) The precursor to a shell mould as claimed in claim 15, wherein the amount of gel-forming material in any layer is no more than 10% by weight of the refractory particles in that layer.

20. (NEW) The method as claimed in claim 10, further comprising a final step of firing the resultant shell mould.